Gyrus PlasmaKinetic® Surgical Generator

USER MANUAL

Manufactured For/Customer Service USA:

Gyrus Medical Inc.
6655 Wedgwood Road
Suite 105
Maple Grove
MN 55311-6502
USA

Tel: 763 416 3000
Fax: 763 416 3001
Toll Free: 1 800 852 9361

Customer Service International (non USA):

Gyrus International Ltd.
410 Wharfedale Road
Winnersh Triangle
Wokingham
Berkshire RG41 5RA
United Kingdom

Tel: +44 (0) 118 921 9700
Fax: +44 (0) 118 921 9800

European Manufacturer:

Gyrus Medical Ltd.
Fortran Road
St Mellons
Cardiff
CF3 0LT
United Kingdom

Tel: +44 (0) 29 2077 6300
Fax: +44 (0) 29 2077 6301

Part Number: 129064-K

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This user's manual will familiarize you with the controls and output functions available from your PlasmaKinetic® Generator and instruct you on its proper use.

1A. Overview of the PlasmaKinetic® Generator

Bipolar electrosurgery is a familiar tool widely employed in surgery. Based on similar principles, the Gyrus PlasmaKinetic® technology combined with Gyrus PK instruments provides more effective coagulation and cutting of tissues than when similar instruments are used with other electrosurgical generators.

A key feature of the Gyrus PlasmaKinetic® Generator is the capability of the generator to identify the type of Gyrus PK instrument connected to it. The identification of the instrument causes the generator to operate in the PlasmaKinetic (PK) mode which selects a default output designed to produce the desired electrosurgical effect for that particular instrument. This feature provides additional convenience for the user of the device. The user can change this default to obtain a wider range of PlasmaKinetic outputs from the device. In addition, a non-PK output is provided equivalent to that available from other electrosurgical generators. The non-PK output allows use of other bipolar instruments which do not have the PK identification feature.

1B. Comparison with Conventional Electrosurgery

Conventional bipolar electrosurgery outputs are rarely optimized to the performance characteristics of specific instruments. This can reduce the speed of clinical effect, increase the thermal margin around the application site and result in tissue sticking to the instrument. The following describes the features of the PlasmaKinetic™ Generator when used with Gyrus PK instruments that distinguishes it from conventional bipolar generators.

- **Vapor Pulse Coagulation (VPC)**

  VPC produces controlled coagulation of vascular pedicles using vapor-focused pulses of energy. VPC has been specifically tailored for delivery through Gyrus PK Instruments. Once tissue to be coagulated is grasped in a PK Instrument, the tissue is uniquely coagulated using the pulses of PlasmaKinetic energy compared to the continuous output employed in conventional bipolar generators. This feature provides controlled and repeatable outcomes under a variety of surgical situations.

- **PlasmaKinetic Tissue Cutting (PK)**

  In the PK output mode, the energy is used to create an ionized plasma around one pole of an Gyrus PK BiLAP instrument. The 'active' pole provides tissue cutting and a level of hemostasis dependent on the selected PK output. This mode utilizes the conductive properties of fluids, both those released from tissues during application as well as saline commonly used to irrigate the body cavity.

1C. Indications for Use

The PlasmaKinetic® Generator is a general surgical electrosurgical device intended for use with bipolar instruments used in open, endoscopic and laparoscopic surgical procedures involving the cutting and coagulation of soft tissue. The device is intended for use by qualified medical personnel trained in the use of electrosurgical equipment.

1D. Contraindications for Use

The use of this device is contraindicated in patients with the following conditions:

Circumcision procedures

Electrosurgery should not be used for circumcision.

Patients with Pacemakers

Use with caution in the presence of internal or external pacemakers. Interference from an electrosurgical current can cause a pacemaker to enter an asynchronous mode or can block the pacemaker effect entirely. For further information, consult the pacemaker manufacturer or hospital Cardiology Department.

1E. Generator Description

The PlasmaKinetic® Generator (figure 1.1) is designed for use in surgery for the cutting and coagulation of soft tissue.

A typical system setup would comprise of the following items:

- A generator
- A dual pedal footswitch

NOTE: It can be used with Gyrus Medical PK surgical instruments and other bipolar surgical instruments.

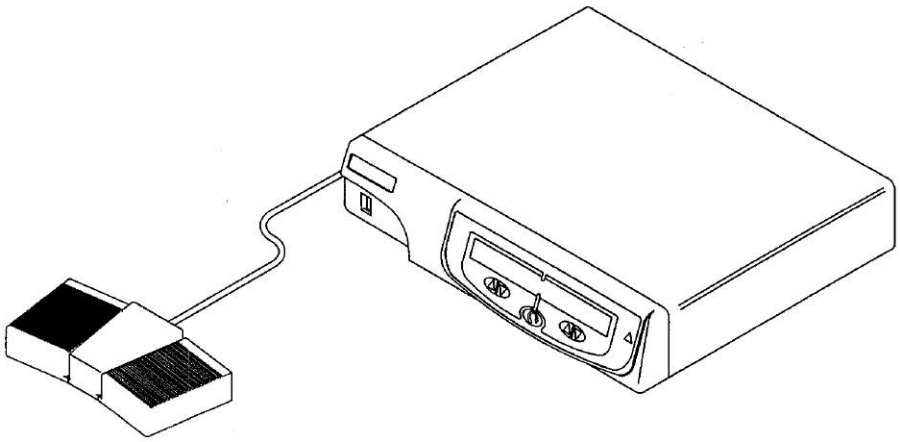


Fig 1.1

1F. Instrument Description

The instruments below are designed and rated to be used with the Generator. For convenience and to improve safety during use, all the dedicated instruments have an internal classification code which is interrogated by the Generator when the instrument is attached. Default settings and power set adjustment limits are then set appropriately for that particular instrument.

Instruments are supplied sterile and are single use only.

Instrument types:

Model No	Description	Connector		Cable
PlasmaKinetic® Molly® Forceps		3300PK	33 cm 3 mm Forceps	3 Pin
		3301PK	33 cm 3 mm Forceps w/Trocar	3 Pin
		3330PK	33 cm 5 mm Forceps	3 Pin
		3345PK	45 cm 5mm Forceps	3 Pin
PlasmaKinetic® Cutting Forceps		3000PK	33 cm 10mm Cutting Forceps	3 Pin
		3001PK	33 cm 10mm Cutting Forceps w/cord	3 Pin
		3005PK	33 cm Cutting Forceps	3 Pin
		3006PK	33 cm Cutting Forceps w/cord	3 Pin
		3045PK	45 cm Cutting Forceps	3 Pin
PlasmaKinetic® LP Scissors		3804PK	33 cm LP Scissors	3 Pin
		3844PK	45 cm LP Scissors	3 Pin
PlasmaKinetic® Needle Electrode		3400PK	33 cm Needle Electrode	3 Pin
Lyons® Dissecting Forceps		3700PK	33 cm Dissecting Forceps	3 Pin
		3740PK	45 cm Dissecting Forceps	3 Pin
PlasmaKinetic® Forceps Macro-Jaw		3600PK	33 cm Macro-Jaw Forceps	3 Pin
		3640PK	45 cm Micro-Jaw Forceps	3 Pin
PlasmaKinetic® Forceps Micro-Jaw		3601PK	33 cm Macro-Jaw Forceps	3 Pin
		3641PK	45 cm Micro-Jaw Forceps	3 Pin
PlasmaKinetic® L-Hook		3527PK	33 cm L-Hook	3 Pin
PK Seal® Open Forcep, Curved		3100PK	25 cm (9¾") Seal Open Forcep, Curved	3 Pin
PK Seal® Open Forcep, Straight		3101PK	25 cm (9¾") Seal Open Forcep, Straight	3 Pin
PK Seal® Open Forcep, Angle		3100PK	25 cm (9¾") Seal Open Forcep, Angle	3 Pin

1G. Connector Cable Description

The connector cable is designed and rated for 20 uses with the PlasmaKinetic Generator and Instruments.

The PlasmaKinetic Connector Cable is supplied non sterile and should be sterilised before use in accordance with its instructions.

Cable types:

	Model No	Description
PlasmaKinetic® Single Function	3900	3 Pin
PlasmaKinetic® Dual Function	3905	5 Pin

The safe and effective use of electrosurgery depends to a large degree upon factors and variables solely under the control of the operator. There is no substitute for good surgical technique and properly trained operating room staff. It is important that the operating instructions supplied with this or any electrosurgical equipment be read, understood, and followed.

Electrosurgery has been employed safely in numerous procedures. Before starting any surgical procedure, the physician should be familiar with the medical literature, complications and hazards of electrosurgery in that procedure.

2A. General

WARNING Hazardous Electrical Output: This equipment is for use only by qualified personnel.

CAUTION Use the lowest appropriate power setting to achieve the desired effect.

CAUTION This equipment is capable of producing a physiological effect.

CAUTION Read the instructions, cautions, and warnings provided with Gyrus Medical instruments or any other appropriate Bipolar Instruments before use.

CAUTION Where practical, only use monitoring equipment that incorporates high frequency current limiting devices during electrosurgical procedures.

CAUTION The connector cable should be positioned so that it avoids contact with the patient and any other leads.

CAUTION Studies have shown that electrosurgical smoke generated during electrosurgical procedures can be potentially harmful to surgical personnel.

CAUTION Examine all accessories and connections to the electrosurgical generator before use. Improper connection may result in arcs and sparks, accessory malfunction, or unintended surgical effects.

CAUTION Do not stick fingers or objects other than the correct cables into the socket. Only activate the footswitch with an instrument attached.

CAUTION Do not connect more than one instrument to the generator at any time.

CAUTION Use only instruments rated greater or equal to the peak output voltage as detailed in the Performance Specifications.

2B. Servicing/Equipment Disposal

CAUTION Electrical Shock Hazard: Do not tamper with the generator housing or attempt to remove the control panel. Refer to authorized personnel for service.

NOTE
1. There are no user serviceable parts within the product.
2. For maintenance of the generator, refer to the recommended periodic equipment safety checks in Section 13.

CAUTION The generator contains electronic printed circuit assemblies. At the end of the useful life of the equipment it should be disposed of in accordance with any applicable policies relating to obsolete electronic equipment.

CAUTION Dispose of any system accessories according to normal institution practice relating to disposal of biologically contaminated items.

2C. Fire/Explosion

DANGER Explosion Hazard: Do not use in the presence of flammable anesthetics.

WARNING Explosion Hazard: The following substances will contribute to increased fire and explosion hazards in the operating room:

- Flammable substances (such as alcohol based skin prepping agents and tinctures)
- Flammable gases which may accumulate in body cavities during endoscopic surgery.
- Oxygen enriched atmospheres
- Oxidizing agents such as nitrous oxide (N_2O) atmospheres

The sparking and heating associated with electrosurgery can provide an ignition source. Observe fire precautions at all times.

WARNING Fire/Explosion Hazard: Verify that all oxygen circuit connections are leak free before and during use of electrosurgery.

2D. Before Surgery

Instrument Accessories

WARNING Electric Shock Hazard: Do not connect wet accessories to the generator.

CAUTION Read the instructions, warnings and cautions provided with the instrument accessories before using.

WARNING Do not attempt to re-use instruments labelled for Single Use Only. Heat or chemical Sterilization may render the instrument mechanically or electrically unsafe.

CAUTION Accessories labelled re-usable must only be processed according to the recommended procedure and, where appropriate, recycled the specified number of times.

CAUTION Use default power levels to test an accessory.

CAUTION Always inspect the system accessories for damage prior to use. In particular, check the cables of any re-usable accessory for possible insulation damage.

Generator

CAUTION Provide as much distance as possible between the generator and other electronic equipment (such as monitors) as an activated generator may cause interference with them.

CAUTION Non-function of the generator may cause interruption of surgery. Ensure that all installation procedures are followed and that all connectors are correctly inserted before use.

2E. During Surgery

Contact With Metal Objects

WARNING Use extreme caution when using electrosurgery in close proximity to or in direct contact with any metal objects. Do not activate in contact with another metal object. Localized heating of the instrument and the adjacent metal object may result in product damage or inadvertent injury.

Generator Power Settings

WARNING Confirm proper power settings are displayed on the generator before proceeding with surgery. Always check that the automatic default settings shown on the display match those indicated on the instrument packaging. Ensure the appropriate output setting is enabled for the desired surgical outcome before activating the instrument and ensure that activation is for the minimum time to achieve the desired surgical effect.

CAUTION Failure of the generator could result in an unintended increase of output power.

CAUTION Use caution when overriding the default power settings.

CAUTION Should a power supply interruption occur, the generator power settings will revert to the minimum values when power is re-established should the accessory combination still be connected.

Instrument Accessories

WARNING When not in use, place instruments in a clean, dry, non-conductive, and highly visible area not in contact with the patient. Inadvertent activation while in contact with the patient may result in burns.

Endoscopic Procedures

WARNING As visualization may be impaired during endoscopy for a number of reasons, be particularly alert to these potential hazards:

- Ensure the tip of the instrument is visible before activation.
- The instrument tip may remain hot enough to cause burns after the electrosurgical current is deactivated.
- Inadvertent activation or movement of activated electrodes outside of the field of vision may result in injury to the patient.
- Localized burns to the patient or physician may result from electrical currents carried through conductive objects. Electrical current may be generated in conductive objects by direct contact with the active instrument, or by either the active or return instrument being in close proximity to the conductive object while activated.
- Carefully insert and withdraw instruments from trocars to avoid the possibility of damage to the devices and/or injury to the patient.

SECTION 3 INSTALLATION

The electrosurgical generator described in this manual, in conjunction with the Gyrus PK Instruments, is designed to provide advanced electrosurgical effects during endoscopic surgery.

3A. Responsibility of the Manufacturer

The manufacturer is responsible for safety, reliability and performance of the equipment only if:

- Installation procedures in this manual are followed.
- Assembly operations, extensions, re-adjustments, modifications or repairs are carried out by persons authorized by the manufacturer and the electrical installation of the relevant operating room complies with local codes and regulatory requirements.
- The equipment is used in accordance with this User Manual and the Instructions For Use which accompany all system accessories.

3B. Generator Power Requirements

Please refer to section 10-1 for full voltage details.

Check the Generator Power Connection

The power connector meets all requirements for safe grounding. Its purpose should not be defeated by using extension cords or any form of adaptor. When disconnecting from the mains socket or from the generator, cords should always be grasped by the plug. **Do not** pull on the cord itself.

3C. Grounding of the Generator

To ensure user safety, the generator must be properly grounded through the inlet plug and power cord.

IMPORTANT Ensure that the electrical installation of the relevant room complies with local codes and regulatory requirements.

Routine Maintenance of the Generator

It is recommended that the generator be inspected by qualified service personnel in accordance with Section 13, Periodic Equipment Safety Checks.

4A. Generator Indicators and Displays

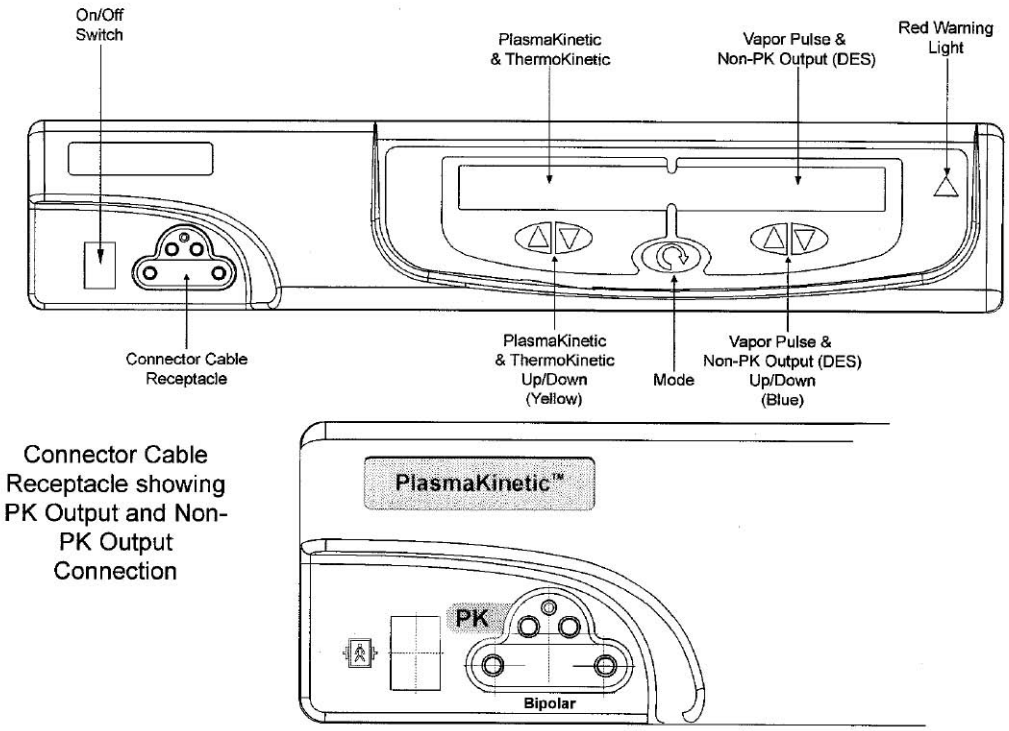


Fig 4.1

Main Power

The main power On/Off rocker switch is located in the bottom left corner of the front fascia.

The generator is switched on by pressing the side marked **I**. A green light will illuminate within the switch to indicate that the power is on.

The generator is switched off by pressing the side marked **O**. The green light will go out to indicate that the power is off. It is advisable to switch off the generator whenever it is not in use for any extended period of time.

PK Instrument Prompt

Power up - When the generator is switched on, an internal check is completed and the symbol **"NON-PK OUTPUT"** is displayed for 2 seconds. This is then followed by the **"NON-PK DES 24**".

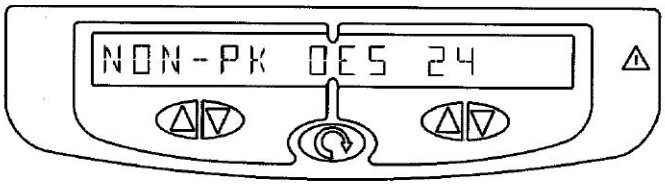


Fig 4.2

When a PK connector cable is attached, the symbols **"INSERT DEVICE"** and **"PK ACTIVE"** alternate on the display.

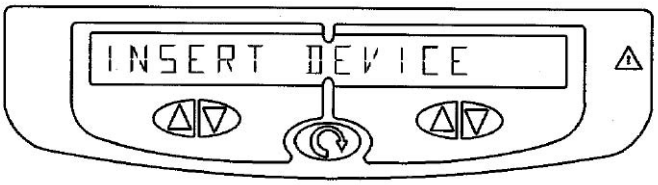


Fig 4.3

Output Displays for PK Instruments

The display is split into two halves
The left portion displays Plasmakinetic (PK) mode selection PK1, PK2, PK3, and ThermoKinetic mode selection T1 or T2 with the default power setting in watts from 5 to 80 dependent on the type of Gyrus PK Instrument attached.
The right portion displays Vapor Pulse Coagulation (VPC) mode selection VP1, VP2, VP3 and standard desiccate (DES), with the default power setting in watts from 5 to 70 dependent on the type of Gyrus PK instrument attached. The VPC mode is only available with Gyrus PK instruments.

The appropriate display will flash and an audible alarm will sound when an output is activated.

Output Displays for Non PK Instruments

When used in non-PK output mode, only the standard desiccate (DES) output is available, with the power settings from 5 to 70 watts. This is displayed on the right portion of the display. The display will flash and an audible alarm will sound when an output is activated.

IMPORTANT PlasmaKinetic (PK) mode and Vapor Pulse Coagulation (VPC) mode can only be used with **Gyrus PK Instruments**.

NOTE The PK output is not available for some PK instruments. The left hand portion of the display remains blank in this case.

NOTE The display will not flash for a VPC output. The tissue impedance will be indicated instead.

4B. Output Mode Selection and Power Controls

When using a Gyrus PK instrument, the generator default power for that intrument will be selected.

Power Up/Down - These buttons adjust the power setting; the yellow arrow buttons for the PlasmaKinetic (PK) and ThermoKinetic (T) outputs and the blue arrow keys for the Vapor Pulse Coagulation (VPC) and Desiccate (DES) output. Press the appropriate button once for a power increment or decrement. Holding down the button accelerates the incrementation or decrementation.

NOTE Power can only be adjusted once an instrument is properly connected to the generator. When using Gyrus PK instruments default output power and power range limiting is set according to the levels shown on the instrument packaging.

Cut	PK3	High impedance tissue (fatty, vascular tissue)
	PK2	Medium impedance tissue
	PK1	Low impedance tissue (thin tissue) ↑ Voltage increasing
ThermoKinetic	T2	High impedance tissue (fatty, vascular tissue)
	T1	Low impedance tissue (thin tissue) ↑ Voltage increasing
Coagulation	VP3	High impedance tissue (fatty, vascular tissue)
	VP2	Medium impedance tissue
	VP1	Low impedance tissue (thin tissue) ↑ Voltage increasing

NOTE Output mode selection can only be performed with an instrument and connector cable attached to the generator. The range of modes available will depend on the type of Gyrus PK instrument being used.

Mode Key Menu System

NOTE If the mode key is quickly pressed and released the generator enters a menu based configuration mode, pressing and holding the mode button at any time exits this mode.

The next item in the menu system is selected by pressing and releasing the mode button.

Pulse Rate Adjustment

In VP mode the generator outputs discrete pluses of RF energy. Two different pulse rates are available for the 5mm and 10mm Cutting Forceps. The “RAPID” pulse rate is set as the default mode on delivery of the generator.

For procedures where a small amount of the tissue is grasped, e.g. skeletonized vessels, better results may be obtained with a slower pulse rate. If this is the case then the “STANDARD” pulse rate can be selected by pressing the MODE button so that the “VP RATE” option is visible. The desired pulse rate can be selected by pressing the Blue Up button. Pressing and holding the MODE button will return the generator to the Standby state. A short press on the MODE button will move to the next Setup Option. The selected pulse rate will be saved for future use when the generator is switched off.

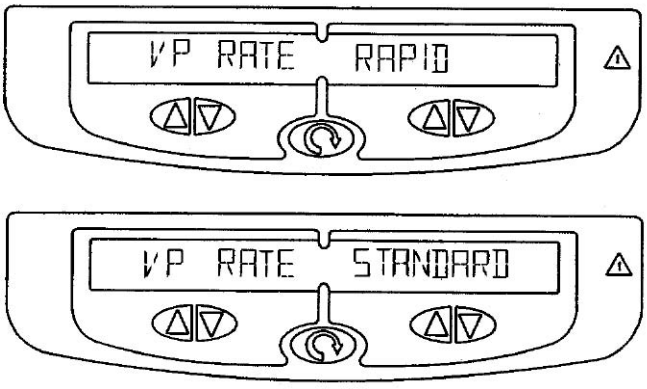


Fig 4.4

Mode Selection using Gyrus PK Instruments - Selecting a mode that differs from the default can assist in delivery of appropriate power into differing tissue impedances, and also provide additional hemostasis in cutting where required.

Pressing and releasing the Mode button twice from the Standby mode will enter Coagulation activation mode menu. The Coagulation mode desired can be selected by pressing the Blue Up button until the mode is seen. The options available will depend on the instrument but will include one or more of:

DES, VP1, VP2, VP3

Des mode provides a conventional continuous output mode. In Vapour Pulse mode the output will vary depending on the instrument selected and the option selected above; generally the larger the contact area the slower the pulses.

Pressing and releasing the Mode button three times from the Standby mode will enter Cut activation mode menu, if the instrument fitted supports an electrosurgical Cut mode. The Cut mode desired can be selected by pressing the Blue Up button until the mode is seen. The options available will depend on the instrument but will include one or more of:
T1, T2, PK1, PK2, PK3

As mentioned above the higher the number the greater voltage applied and therefore a more aggressive cutting action will be provided. T or Thermokinetic mode provides enhanced hemostasis whilst cutting as it continuously alternates cut and desiccate waveform outputs.

A further press and release of the “Mode” button will move the menu to set the alarm volume, which is dealt with in the next section.

4C. PlasmaKinetic Generator Indicators, Set-up and Malfunction Displays

- **Activate Tones and Impedance Indicator Volume Adjustment**

Volume Adjustment - The activation tone volume can be adjusted between minimum and maximum using the up control of the desiccate (blue) power control. Depress and release the mode button until the symbol **“ALARM VOLUME”** appears (figure 4.7). Press and release the mode button once more to accept the setting.

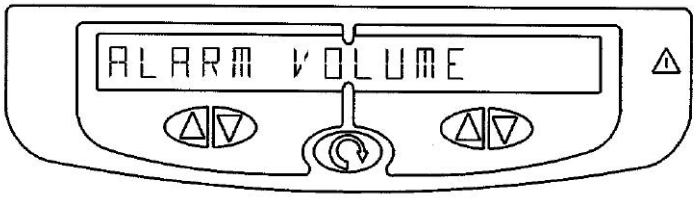


Fig 4.5

- **Impedance Indicator**

Impedance is measured by the generator to provide assistance in determining the tissue effect endpoint, in addition to the visual and tactile feedback available to the user. The impedance of the tissue rises during the desiccation/coagulation process. Indication of this is provided via audible and visual signals to be used as a guide to determining when treatment is complete.

Different formats of impedance indication are available, or the indication can be removed if desired.

The two impedance display options are in the form of a bar graph, or a numeric display. These can be selected by pressing the mode button repeatedly until the generator display shows **“BARGRAPH DISPLAY”**, **“NUMERIC DISPLAY**”, or **“NO DISPLAY”** (see fig 4.4); the option can be changed by pressing the desiccate (blue) UP control. The setting selected will be retained whilst the generator is switched off.

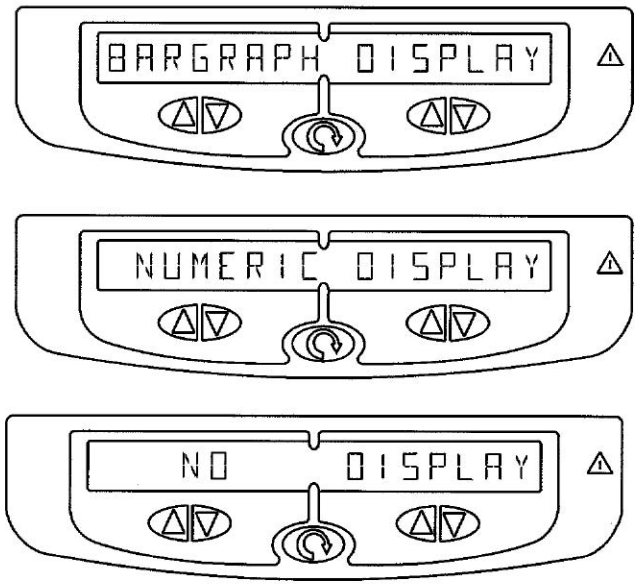


Fig 4.6

The numeric display is shown below (fig 4.7):

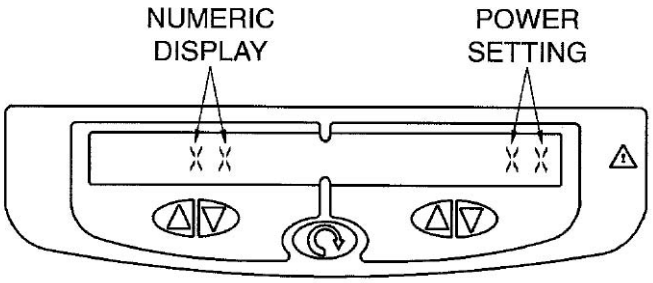


Fig 4.7

The numeric display will run from 1 (lowest impedance) to 99 (highest impedance).

The bargraph display is shown below (fig 4.8):

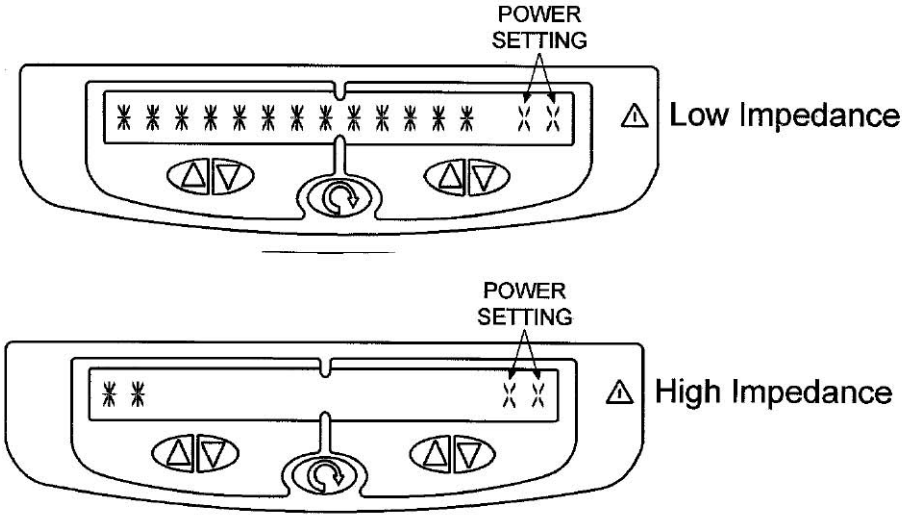


Fig 4.8

Thirteen asterisks are displayed initially with the number reducing as the impedance rises.

The audible tone that accompanies the visual display starts at a high pitch and falls as the impedance increases.

The **"NO DISPLAY"** setting removes the impedance display and replaces it with three dashes across the center of the display. The audio feedback is changed to a single tone.

- **Conventional Non-PK Bipolar Instruments**

Power up - The symbol **"NON-PK"** is displayed at a nominal default power setting. A standard 4mm jack bipolar connector cable can be connected to the receptacle labelled **"Bipolar"**. None of the other modes are available using the non-PK output.

If the power is adjusted to a level below 24 then this setting will be retained when the generator is switched off and powered on again. A setting above 24 will revert to 24 on switch on.

The audio tone will be constant and will not vary with impedance during activation in this mode, although the bar graph or numerical display functionality will be as described above.

- **Activation Status**

Activate - When the generator is activated, the power display of the selected output flashes and an audible tone sounds. If neither occurs, then there is a malfunction.

- **System Failure Displays**

Non-critical failure

Shorting - For Gyrus PK instruments, if an instrument short occurs an oscillating audible alert is sounded and the display shows the symbol **"REGRASP"**. The surgeon should release the instrument jaw and reposition the tissue. This is displayed as:

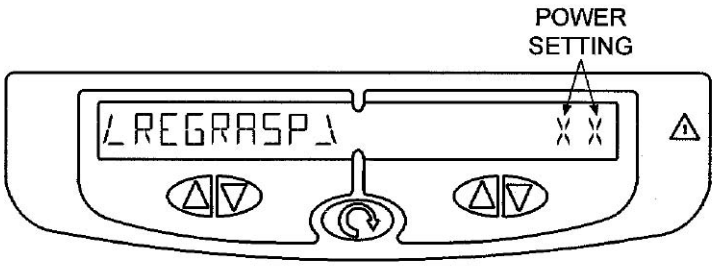


Fig 4.9a

For non-PK operation, RF activation will be terminated if the short persists. After removal of the short, power can be re-applied by releasing and depressing the footswitch

Clean tip prompt

The "Clean Tip" message is displayed if the generator determines that the tip is heavily contaminated, or contaminated sufficiently that it is unable to confirm that the correct electrodes are in use for a Zip type instrument. Having cleaned the tip operation of

any front panel button will allow treatments to resume. For cleaning refer to appropriate instructions for use for the instruments.

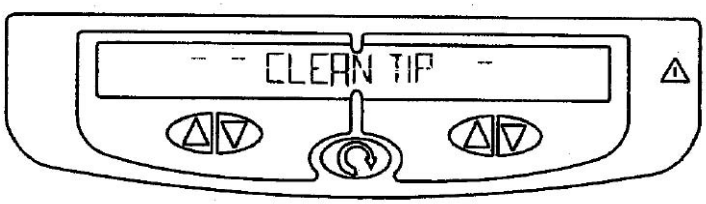


Fig 4.9b

Fault - If a fault is detected during set-up or during use a fault code message is displayed as indicated by the **"FAULT XXX REF XX"** symbol on the front panel display (figure 4.9). Refer to Section 9, Operating Room Troubleshooting.

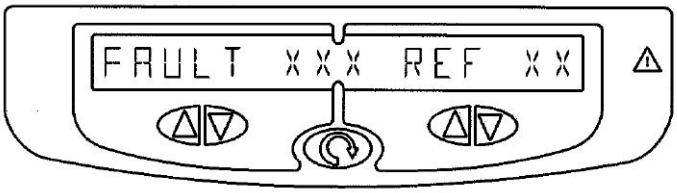


Fig 4.10

Critical Failure

Red Warning Symbol - Except during the self-test routine and a non-critical failure, illumination of the red warning symbol on the front panel when accompanied by the **"ERROR XXX REF XX"** symbol (figure 4.10) on the front panel display indicates a critical failure. In the case of a critical failure, **DO NOT ATTEMPT TO USE THE UNIT**. Refer immediately to Section 14 for customer service.

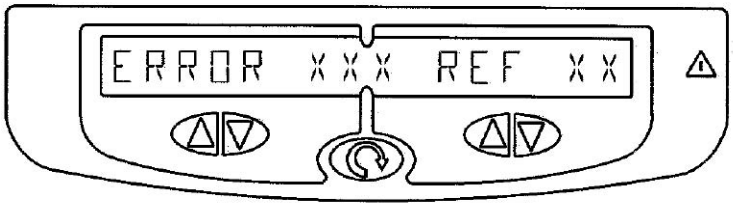


Fig 4.11

• **PlasmaKinetic Generator Connectors and Receptacles**

The PK Single Function connector cable is connected to the generator through the PK connector cable socket on the front panel of the generator (figure 4.1). The non-PK output is accessed using a standard 4mm jack bipolar connector cable using the receptacle below the PK socket. The Dual Function PK Connector is simultaneously connected to both PK & Non PK Sockets.

The mains power cord, footswitch cable and protective earth cable are connected to the generator through fittings on the rear panel (figure 4.12).

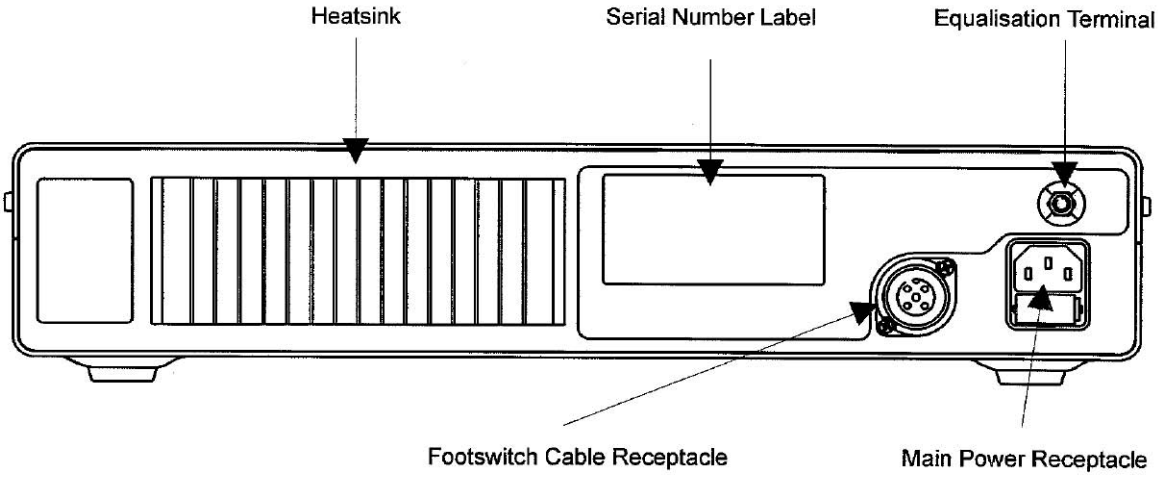

Heatsink
Serial Number Label
Equalisation Terminal
Footswitch Cable Receptacle
Main Power Receptacle

Fig 4.12

This section describes how to set up the PlasmaKinetic™ Generator before surgery. Prior to using the system, you should ensure that the following associated equipment has been prepared for use:

- An appropriate sterilized reusable Connector Cable.
- An appropriate Gyrus PK instrument(s) or non-PK instrument(s) for the procedure to be performed.

5A. Power up the Generator

Install the Generator

- Place the generator on a table, cart, racking system or other stable platform that can be positioned as close as possible to the operative site during use.
- Ensure that the generator is standing on a flat, firm surface and that it is not at risk of being accidentally dislodged during the course of operating theatre activity.
- Provide at least four inches of space from the rear of the generator. Never cover the generator or stack other equipment on top of it. It is normal for the generator to become warm during use so ensure adequate ventilation.

Connect the Generator

Plug the supplied AC power cord into the receptacle on the rear of the generator and then connect the other end of the cord directly to an AC power point. Avoid the use of extension cords or multiple plug adaptors. Wherever possible, avoid trailing leads and neatly store excess power cord.

Connect the Footswitch

Connect the dual pedal footswitch to the receptacle at the rear of the generator by orienting the lug on the plug with the groove in the receptacle and pushing the plug into place. Secure the plug by screwing down the locking ring in a clockwise direction.

Switch the Generator On

Verify the completion of the system initialization sequence by observing the symbol **"NON-PK DES 24"** flashing on the display prompt for approximately 2 seconds.

5B. Select and Connect the Connector Cable

Depending on which instruments are to be used select either a PK connector cable or a standard 4mm jack bipolar connector cable.

Introduce the sterile connector cable to the sterile instrument table or trolley according to the sterile handling practices at your facility.

The cable and connectors should be inspected for any processing damage.

IMPORTANT If any of the connector pins are bent or if the cable shows any signs of crush damage, cracking or distortion, it must be discarded. The generator end of the connector cable should then be passed to a non-sterile operative for connection to the generator. Ensure that sufficient length of cable is retained for connection to the instrument, that sufficient slack is provided so that operation is not impeded, and that sufficient slack is also allowed for attachment to the surgical drapes.

5C. Attach Gyrus PK Instrument to PK Connector Cables

Connect the Gyrus PK instrument to the PK Connector Cable by aligning the two connector halves and pushing together. Once connection is made the generator display will change to the default settings appropriate to the instrument being used.

CAUTION Verify that the generator display matches the Gyrus PK instrument default settings provided on the package labelling. If the generator display does not match the default settings, check all connections. If the problem persists contact your local sales representative.

5D. Attach non-PK Instrument to Standard Bipolar Connector Cable

Connect the instrument to the standard bipolar connector cable according to the instructions for use accompanying the devices being used.

CAUTION The power setting in non-PK output requires manual adjustment. Use the setting recommended in the instructions for use provided with the instrument. Otherwise use the lowest power setting to achieve the desired effect.

If a non-PK instrument is used then the generator will go to the last used setting or the **"NON-PK DES 24"** default of '24', whichever is the lower power, when the main power is switched on.

This section describes how to use the PlasmaKinetic® Generator during surgery.

6A. Recommendations During Surgery

- Refer to the cautions and warnings at the front of this manual.
- Unless circumstances dictate otherwise, use Gyrus PK instrument default settings to enhance patient and user safety.
- When using the non-PK output use the lowest power to achieve the desired effect.
- Remove any gross tissue build-up from the tips of the instruments to maximize surgical effect.
- Activate only for sufficient time to achieve the desired surgical effect and use the Impedance Indicator system to aid but not replace surgeon judgement.
- Ensure that the correct footswitch is used for the desired mode.
- Tissues dry out during surgery and regular irrigation of tissues with saline will ensure repeatable surgical effects.

6B. PK Default Settings

The power settings and mode used for the intended procedures vary considerably both with the surgeon's technique and the configuration of the instrument being used. Some experience may be required before optimal power settings to suit the particular surgical technique are determined. Until the surgeon becomes familiar with the characteristics of the system, caution should be used when adjusting PK default settings which have been allocated to provide safe and effective performance.

The PlasmaKinetic® Generator incorporates a Vapor Pulse Coagulation (VPC) mode which is the default applied to the Gyrus PK instruments. This mode is designed to reduce both thermal margins and tissue sticking, providing controlled and repeatable outcomes under a variety of surgical situations. The energy absorption is measured during each pulse to provide the Impedance Indicator feedback as a guide to when tissue treatment is completed.

The PlasmaKinetic® Generator incorporates a PlasmaKinetic (PK) mode that is the default applied to the PK BiLAP range of Gyrus Instruments for laparoscopic use. In this mode the energy is used to create an ionized plasma around one pole of the PK BiLAP instrument. The "active" pole provides tissue cutting and a level of hemostasis dependent on the selected PK output. This mode utilizes the conductive properties of fluids, both those released from tissues during application as well as saline commonly used to irrigate the body cavity.

6C. Non-PK Output

The NON-PK output is available with all instrument configurations and is similar in characteristic to the output expected from conventional bipolar generators. It is the only output available with non-PK bipolar instrumentation. The hemostatic effect will be dependent on factors such as the active instrument contact area and power setting.

6D. Activation: Output Selection and Audible Tones

In common with conventional electrosurgical generators, output activation is achieved using the blue and yellow pedals of the footswitch.

BLUE PEDAL: Vapor Pulse Coagulation (VP1, VP2, VP3) and Desiccate. (DES). Activation accompanied by flashing of the desiccate power display and an audible tone. In VP1, VP2 and VP3 modes used in conjunction with Gyrus PK instruments the audible tone acts as the Impedance Indicator feedback.

YELLOW PEDAL: PlasmaKinetic (PK1, PK2, PK3) and ThermoKinetic (T1, T2) depending on output mode selection. Activation is accompanied by flashing of the PK or T power display and audible tone.

IMPORTANT Familiarize yourself with the audible output tones to verify output selection as it is often difficult to visualize the footswitch pedals during surgery. It is important to recognize the tones relating to the various output modes.

Electrical Short Indication

In PK mode, an audible and visual alert warns of an instrument short. The surgeon should release the instrument jaw and reposition the tissue.

IMPORTANT Shorting can be caused by the instrument jaws being locked too tightly. If this occurs, release tissue then re-grasp.

In non-PK mode, the output can be re-started following a persistent fault by releasing and depressing the footswitch.

6E. Changing Output Mode and Power Setting during Surgery

When using a Gyrus PK instrument, adjustment of output modes: DES, VP1, VP2, VP3 and PK1, PK2, PK3, T1 and T2, can be changed at any time other than while activated or while the generator displays a malfunction. The permissible range of mode adjustment will be limited by the identification code.

Selection of the desired coagulating and cutting mode can be done independently for software version 1.9 onwards. This is described in section 4B “Output Mode Selection and Power Controls”.

6F. Changing Instruments During Surgery

Once a Gyrus PK instrument is disconnected, the generator will automatically revert to the display showing the **“INSERT DEVICE”** symbol. Inserting a new PK instrument type will reset the generator to the default settings for that specific instrument. Unless the instrument has the same identification code, any adjustments to the generator settings made when using the previous instrument will be overridden.If a non-PK instrument is used then the generator will go to the last used setting or the **“NON-PK DES 24”** default whichever is the lower power.

If the PlasmaKinetic Generator is switched on with a PK instrument attached the generator power setting will be the lowest power available for that particular PK instrument. The operator can then adjust the power setting to that appropriate for the procedure. Please refer to the PK instrument IFU to see the minimum setting.

If the PK connector cable and PK instrument are connected together and then inserted into the PlasmaKinetic Generator the default setting for that instrument will be displayed.

6G. Changing Accessories Between Procedures

Section 8 describes the disconnection of the connector cable and instrument.

Once the connector cable is disconnected, the generator will automatically revert to the display showing the **“NON-PK DES 24”** symbol for approximately 2 seconds, followed by **“NON-PK”** and default power.

The generator can be left in this stand-by mode between procedures.

CAUTION If the generator is maintained in stand-by mode between procedures and the same PK instrument type is employed for the next procedure, then

any adjustments made to the output settings during the previous procedure will be remembered and will supersede the default settings.

Inserting a new PK instrument type will reset the generator to the default settings for that particular type. Any adjustments to the PK Generator settings made during the previous procedure will be overridden.

Switching the power off will clear all prior PK output adjustments.

During surgery the following are suggestions that a surgeon may wish to follow:

- The surgeon should use the impedance audible and visual feedback system as a guide to optimize the desired level of tissue desiccation. The relative degree of desiccation is determined by the decrease in alarm pitch and decrease in the number of stars on the display graph. These indicators show when tissue desiccation has been completed. The surgeon can choose to continue to apply power but this may increase the potential for tissue sticking.

- The impedance feedback system may indicate a decrease in impedance during activation, with a lowering tone and an increase in the number of stars on the display. This may be due to conductive fluids being released from the tissue or flowing from adjacent areas. Changing the grasp during activation will also change the indication sequence. It is advisable to maintain constant grasp force and wherever possible to lift the tissue away from fluid pools during activation.

- When using the Gyrus PK instruments that require tissue grasping, to optimize performance in the VP mode, tissue should be grasped firmly with the instrument to maintain constant pressure during activation. If, on application, shorting occurs then the tissue should be regrasped, varying tissue position and/or force as necessary. The surgeon should take care when grasping very thin tissue but if shorting continues the surgeon can leave the jaws slightly open and twist as the power is applied. If tissue adherence to the instrument jaws occurs, regrasp and reapply.

- When using the PK Seal forceps, coagulating effect will occur to the tissue between coagulating surfaces. Continue to activate the PK Seal forceps until it has been determined that the desired tissue effect is achieved. Both coagulating surfaces should be in equal contact with tissue for optimum coagulation. If both jaws come in contact with one another (metal to metal) or have minimal tissue involvement, the desired tissue effect may be substantially reduced.

- When using the Gyrus PK LP Scissors the optimum coagulation performance is attained when rotating the tips clockwise through 90 degrees as power is applied.

- When using the PK modes with the Gyrus PK L-Hook, irrigation with saline will enhance the cutting action. If the instrument is failing to achieve adequate cutting, the surgeon can apply power and wiggle the instrument from side to side to maintain the cutting action. Cutting may also be improved by taking smaller bites of tissue and by applying countertraction to the tissue to be cut.

- When using the PK modes with the Gyrus PK L-Hook, try to avoid excessive build up of coagulum between the hooks. This will diminish coagulation performance and increase smoke production during cutting.

- When using the PK modes with the Gyrus PK Needle to produce a hemostatic incision, it is advisable to change the default mode to ThermoKinetic mode: the hemostatic effect increasing from T2 to T1.

- When using any of the instruments in the Gyrus PK range in the VPC mode the default setting should be used. If the power is increased there will be a potential increase in the thermal spread.

After surgery, the following steps should be performed:

8A. Following Surgery

a) Detach the instrument from the connector cable.

CAUTION Always detach by grasping the two halves of the connector and not the cable(s). Failure to do so may result in cable damage.

b) Dispose of the SINGLE USE instrument(s) according to your facility's policy on the disposal of surgical waste.

c) Disconnect the connector cable from the generator by grasping the plug and pulling gently from its socket on the front of the generator.

d) Turn off generator.

WARNING Do not attempt to re-use Single Use Only instruments. Heat or chemical sterilisation may render the instrument mechanically or electrically unsafe.

8B. Cleaning the Footswitch

a) Disconnect the footswitch from the rear panel of the PlasmaKinetic™ Generator by first unlocking the retaining ring by rotating in a counter-clockwise direction and then withdrawing the plug from its receptacle.

WARNING Do not pull on the footswitch cable prior to unscrewing the connector locking ring. Such action may cause malfunction or intermittent activation during use.

b) Remove all gross matter (blood, mucus, tissue) by wiping each component with a cloth or gauze pad and a mild cleaning solution or detergent capable of removing organic deposits.

IMPORTANT Do not immerse in reprocessing solutions. Do not use abrasive cleaning agents. Do not use ultrasonic cleaners. Product damage may otherwise result.

c) Remove residual cleansing agents with a water dampened cloth.

WARNING The Footswitch is not designed to be sterilized. Sterilisation could lead to product damage or malfunction during use.

8C. Cleaning the Generator

Use a mild antibacterial detergent on a damp cloth to clean the generator. Do not allow fluids to enter the generator connectors. Do not use caustic, corrosive, or abrasive cleaning materials. The generator cannot be sterilized.

8D. Cleaning and Sterilising the PK Connector Cable

Prepare the PK connector cable for steam sterilisation according to the following cleaning procedure:

a) Remove all gross matter (blood, mucus, tissue etc.) by wiping the PK Connector Cable with a cloth or gauze pad and a mild cleaning solution or detergent capable of removing organic deposits.

IMPORTANT To avoid damage to the cable and connectors do not immerse in reprocessing solutions or use abrasive cleaning agents.

b) Rinse thoroughly in running water.

c) Remove residual cleaning agents with a water damp cloth.

d) Dry the device thoroughly before sterilising.

Sterilise the connector cable according to the sterilisation procedure described in the Connector Cable Instructions For Use.

IMPORTANT The connector cable supplied as part of the Gyrus PlasmaKinetic System is intended for 20 re-use cycles only.

WARNING Do not attempt to re-use PlasmaKinetic Instruments. Heat or chemical sterilisation may render the instrument mechanically or electrically unsafe.

WARNING Exceeding the recommended number of uses may result in electrical or mechanical failure during use or difficulty when attaching or detaching the instrument to or from the PK connector cable.

Problem	Suggestions/Solutions
No output power	• Check cables. • Check instrument connection. • Request assistance from service engineer.
Generator resets during activation (Fault 100.10)	• Check grounding of generator. • Check insulation of connector cable. • Check integrity of instrument. • Ensure no contact was made with other equipment during activation.
Red warning symbol illuminates	• Refer to fault code in section 11 and request assistance as necessary.
Unable to activate the generator	• Check footswitch for damage • Ensure approved footswitch is attached.
Alarm tone too loud or too quiet	• Re-adjust volume by means of the mode switch. Generator will remember the last volume setting employed.
No display on the generator	• Check the inlet fuse, replace with the correct type if necessary; request assistance from qualified service engineer if fault persists.
Generator flashes **"NON-PK DES 24"** after cable inserted	• Verify that the cable connector is fully inserted. • Check for damage to cable flex. • Remove connector and inspect pins for damage.
Generator flashes **"INSERT DEVICE"** after instrument attached	• Ensure the connector cable contacts are clean and dry and have not been damaged during reprocessing. • Check instrument integrity.
Generator overheats (Fault 300.10)	• Allow generator to cool down before re-use. • Check that sufficient ventilation is provided around generator (refer to Section 5A). • Ensure ambient temperature is within operating limits.
Generator displays an error message during activation	• Check the tip contact with another metal object.
No Visual or Audio feedback of impedance	• Option not selected.

Environmental Conditions

Transport and Storage	Ambient Temperature	0 to 50°C
	Relative Humidity	10% to 90% non-condensing
	Atmospheric pressure	500 to 1060mBar
Operation	Ambient Temperature	10 to 40°C
	Relative Humidity	10% to 90% non-condensing
	Atmospheric pressure	500 to 1060mBar
Generator Power Source	Operating Range	Nominal 100-120 / 220-240 Volts RMS 50/60 Hz
	Regulation voltage	90-132 / 198-264 Volts RMS
	Inlet Fuses	Time lag 5A (T5A) 400VA
Generator Weight	6.1 kg (approx.)	
Generator Overall Dimensions	400 x 400 x 88 mm (16" x 16" x 3½") (approx.) (DxWxH)	

Generator Earth Leakage Currents

< 300 µA at 250Vrms
< 100 µA at 132Vrms

Alarm Volume — Adjustable between 40dB (minimum) and 65dB (maximum) at 1m. This is an activation signal only.

Classification — Class 1 (IEC 601-1)

Defibrillator Proof — Type BF equipment with isolated (F) applied part. Each of the instrument terminals can withstand the effects of a defibrillator discharge.

Liquid Spillage as per IEC 601-2-2

The generator enclosure will prevent reasonable amounts of liquid from interfering with the generator's safe and satisfactory operation.

Intermittent operation — The generator is cooled by natural convection. Under maximum power setting and rated load conditions the generator will provide full power output with the minimum constraint of 10 seconds on, 30 seconds off, duty cycle for 1 hour.

Output Waveform and Characteristics

Waveform — The RF output is a variable amplitude sinusoid waveform varying between approximately 320kHz and 450kHz, corresponding to minimum and maximum load impedance respectively.

Crest Factor — A constant crest factor of 1.4 nominal for all vaporize outputs; 1.4 to 6.3 for desiccate waveforms.

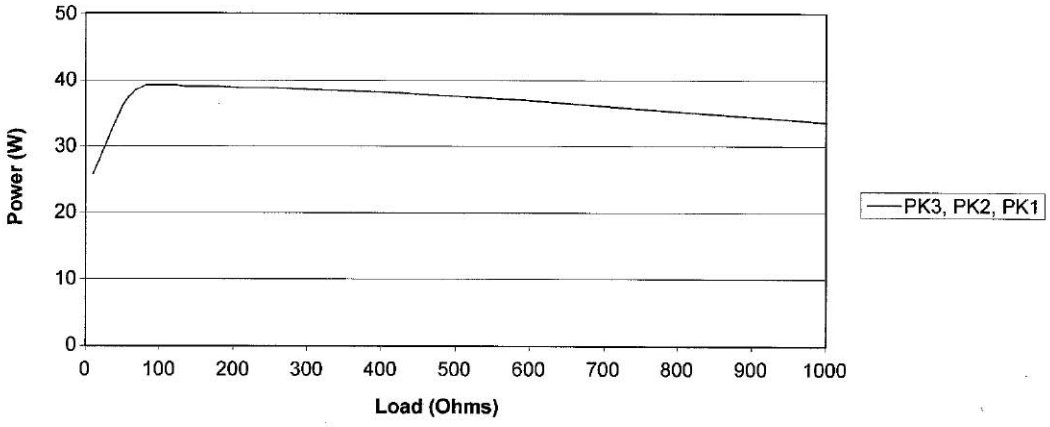
Power	Maximum power	80 watts into 160 Ohms, PK modes
		70 watts into 160 Ohms, DES modes
		60 watts into 80 Ohms, VP modes

Max Voltage PK1 254 Volts RMS
PK2 307 Volts RMS
PK3 340 Volts RMS
T1 307 Volts RMS
T2 340 Volts RMS
DES 120 Volts RMS
VP1 73 Volts RMS
VP2 100 Volts RMS
VP3 120 Volts RMS

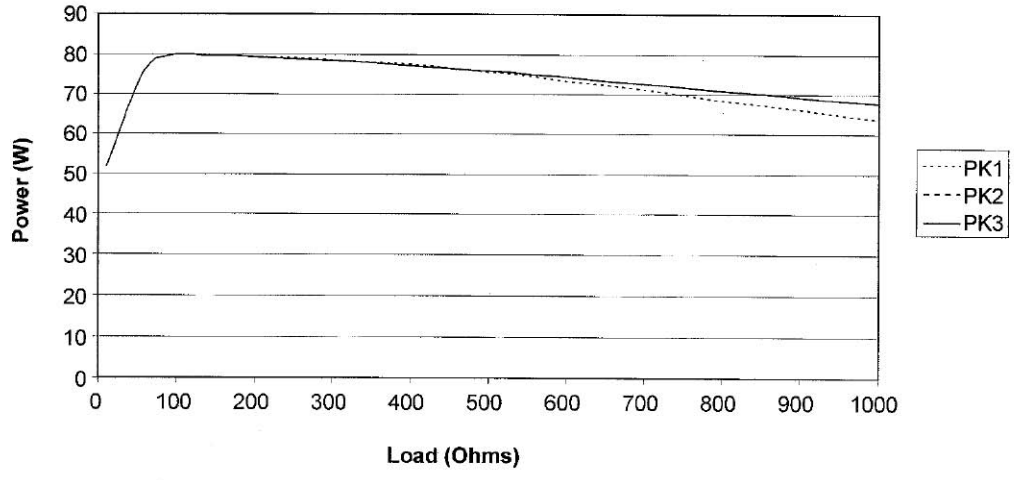
CAUTION The following load curves apply to the fundamental power delivery capability of the generator alone. They do not imply a given power output for any given instrument and connector cable configuration when used with the generator. Each accessory will self-impose an upper set power limit for the generator.

CAUTION Some electrode settings will not allow full power to be administered.

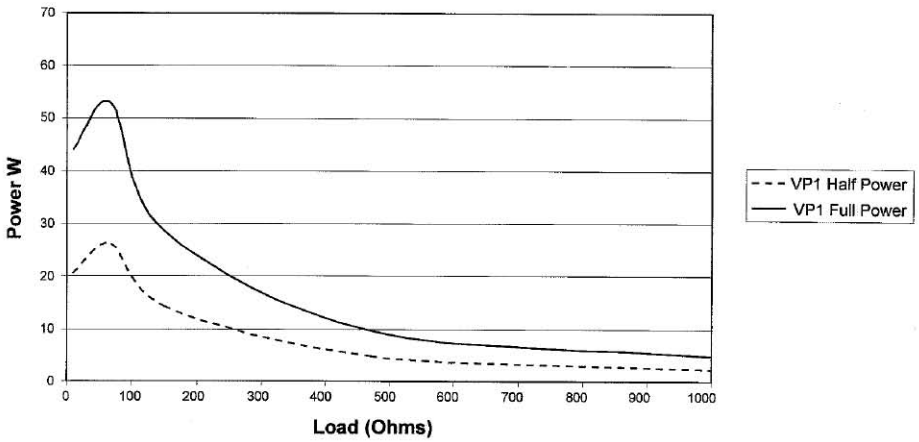
PK Half Power Load Curve



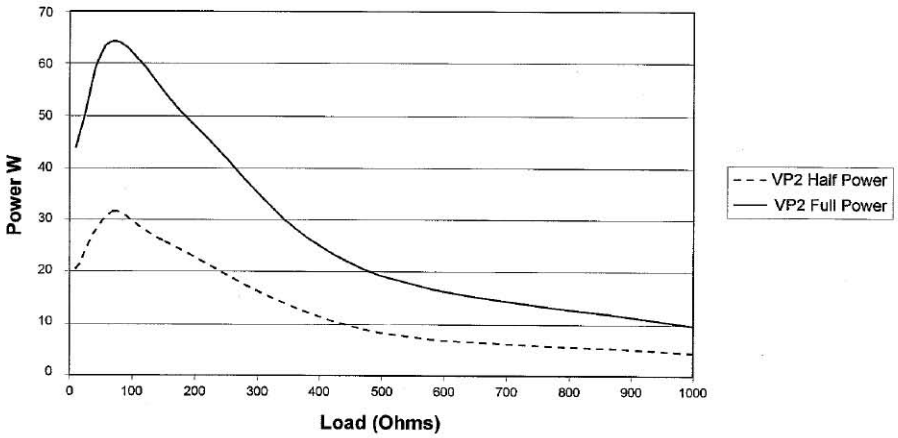
PK Full Power Load Curve



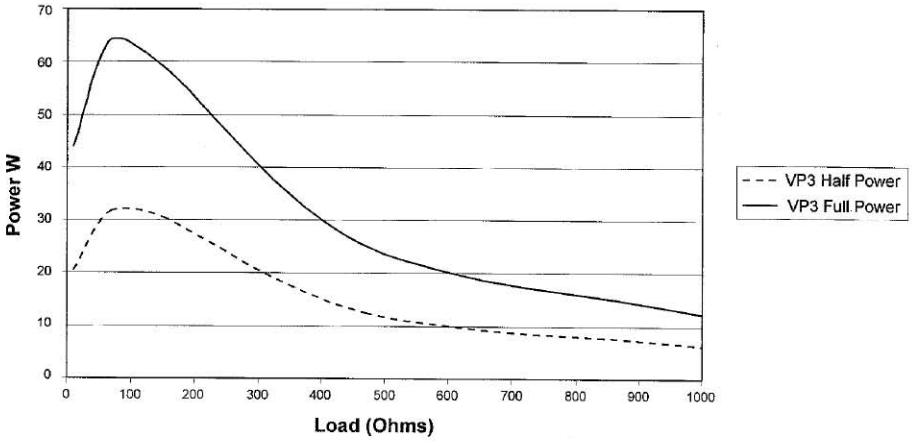
VP1 Load Curve



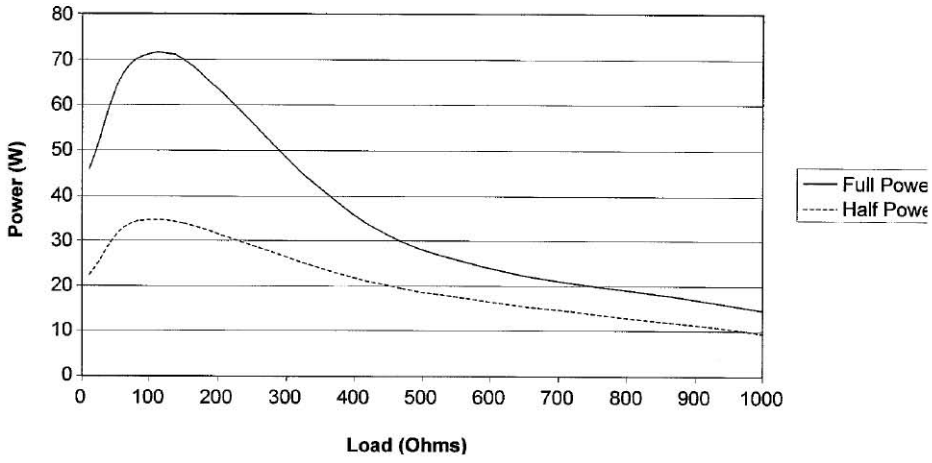
VP2 Load Curve



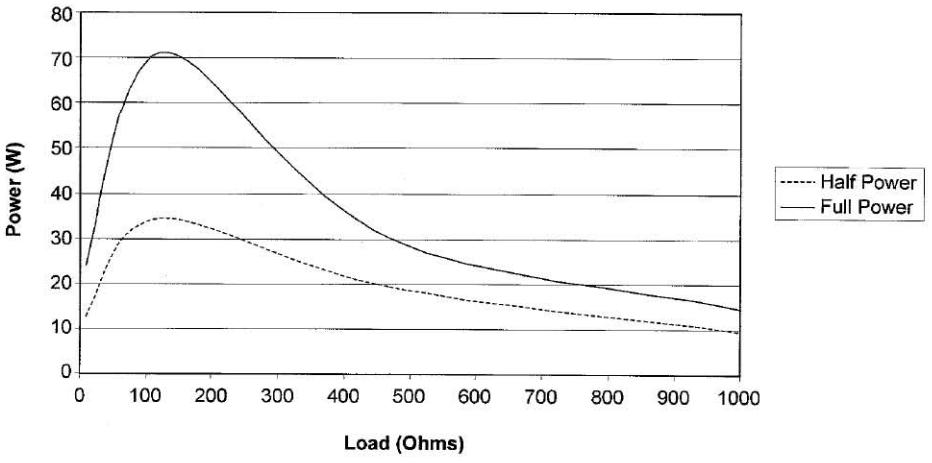
VP3 Load Curve



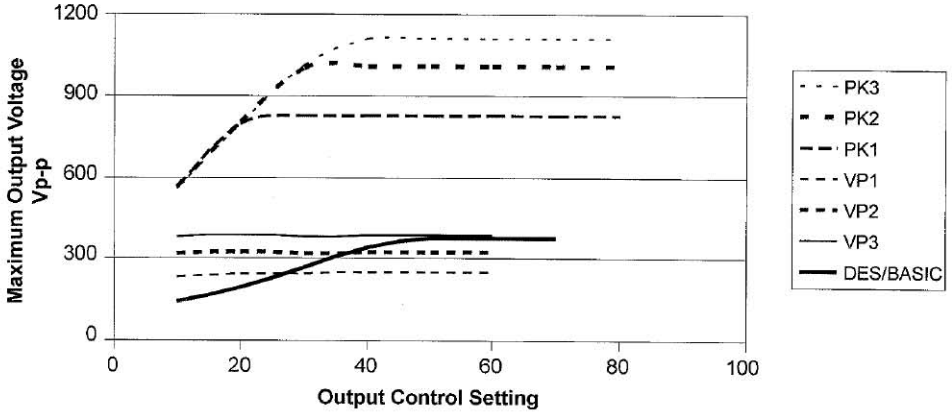
DESICCATE Load Curve

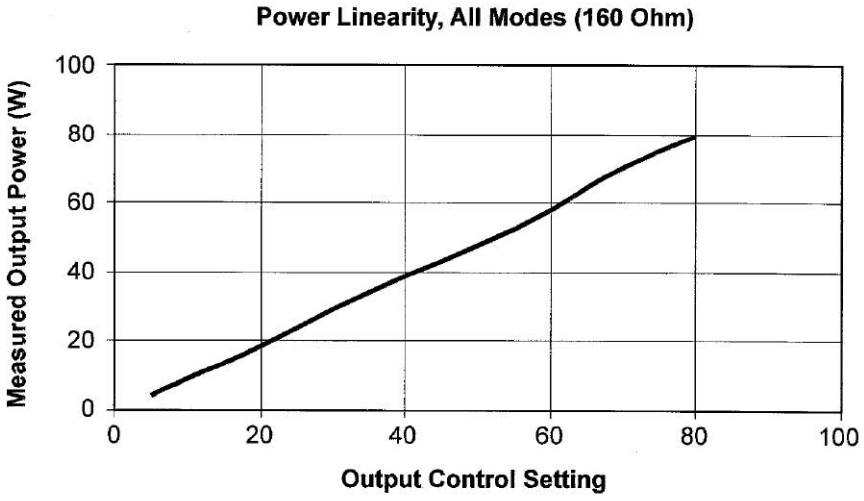


NON-PK Load Curve



Peak Output Voltage at Open Circuit vs Output Control Setting




Power Linearity, All Modes (160 Ohm)
Measured Output Power (W)
100
80
60
40
20
0
0
20
40
60
80
100
Output Control Setting

Error and Fault Symbol Interpretation

Most technical problems are indicated by either a fault or error symbol that appears in the generator display window.

Fault Symbols

Any fault code is displayed as:

"Fault XXX Ref XX" (figure 4.8)

Faults are transient, non-hazardous events and are recoverable using a generator reset function. To reset the generator after a fault occurs, first depress and release the mode key once. The fault symbol on the display should flash. Depress and release the mode key once more to complete the reset.

IMPORTANT Remember to take note of the fault symbol for reporting to a service engineer before completing the reset.

Error Symbols

Any error symbol is displayed as:

"Error XXX Ref XX" (figure 4.9)

WARNING An error symbol indicates an equipment malfunction which may be hazardous. Disconnect all accessories and switch the generator off. Switch the generator back on and if the self-test is completed satisfactorily as evidenced by the **"NON-PK DES 24"** (figure 4.2) in the display, the failure occurred in the accessories which should be discarded and replaced. If the self-test fails, then all functions will be inhibited and no attempt should be made to use the generator. Contact Gyrus Medical Ltd. or an approved service agent for assistance.

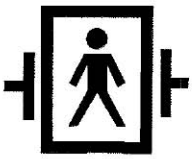
In the following list, where indicated as recoverable, this would be displayed as a fault symbol as described above.

Error or Fault Symbol	Ref	Description
100	10	Software failure (r)
100	11	ROM checksum failure (f)
100	12	Non volatile memory failure (r)
100	13	Memory failure (f)
100	14	Power generation fault on start up (r)
100	15	Power generation shutdown fault (f)
200	10	Unable to drive PWM signal: shorted high (f)
200	11	Unable to drive PWM signal: shorted low (f)
200	12	Unable to drive SYNC signal: shorted high (f)
200	13	Unable to drive SYNC signal: shorted low (f)
200	14	ENERGY signal: stuck high (f)
200	15	IOUT signal: stuck high (f)
200	16	Unable to drive H/FOOT signal: shorted high (f)
200	17	Unable to drive H/FOOT signal: shorted low (f)
200	18	Unable to drive CUT/COAG signal: stuck high (f)
200	19	Unable to drive CUT/COAG signal: stuck low (f)
200	20	CLAMP signal error (f)
200	21	BOOST signal error (f)
200	22	PEAKSET signal error (f)
200	23	PEAK signal error: stuck high (f)

Error or Fault Symbol	Ref	Description
200	24	RF_DET signal error: stuck low (r)
200	25	OVERDOSE signal error: stuck high (f)
200	26	ENERGY signal error: stuck low (f)
200	27	Line voltage relay error (f)
200	28	Temperature monitor inoperative (f)
200	29	Audio volume inoperative (r)
200	30	Diagnostic circuit fault (f)
200	31	CURRLIM signal error (f)
300	10	Internal overheating (r)
300	12	Out of specification input voltage : low (f)
300	13	Out of specification input voltage : high (f)
300	14	Accessory fault (Refer to section 9 of this manual) (r)
400	10	Footswitch BLUE pedal stuck (r)
400	11	Footswitch YELLOW pedal stuck (r)
400	14	Instrument identification circuit fault (r)
400	15	Front panel switch fault : yellow UP button (r)
400	16	Front panel switch fault : yellow DOWN button (r)
400	17	Front panel switch fault : blue UP button (r)
400	18	Front panel switch fault : blue DOWN button (r)
400	19	Front panel switch fault : MODE button (r)
400	20	Intermittent activation switch (r)
400	30	Dual Function Accessory Problem (r)
500	10	Serial port not functional (r)
500	11	Serial port timeout (r)
500	12	Host computer not present (r)
500	13	Possible board short (PWM) (f)
500	14	Possible board short (Sync) (f)
500	15	[RESERVED]
500	16	Possible board short (H/FOOT CUT/COAG) (f)

KEY: (f) Fatal (r) Recoverable

Generator front and back panels

	Red Warning Symbol Attention, consult accompanying documents.
	This equipment intentionally emits RF energy during activation.
	This equipment provides a degree of protection against electric shock to TYPE B as defined in IEC601-1. This equipment has an F type applied part capable of withstanding the effects of defibrillator discharge.
	This symbol indicates the conductor that may be used to provide potential equalization between the equipment and the installation busbar.
	This symbol indicates the receptacle to which the generator footswitch should be attached.

SECTION 13 PERIODIC EQUIPMENT SAFETY CHECKS

The manufacturer recommends that the PlasmaKinetic® Generator should be regularly inspected to ensure continued safety of operation throughout its service life. The following safety checks should be performed at least every 12 months by a qualified person who has adequate training, knowledge and practical experience to perform such tests.

NOTE: There are no user serviceable items within the generator.

- Inspect the generator and the footswitch for obvious signs of mechanical damage or wear. Ensure that the generator case shows no sign of tampering. There are no user serviceable items within the generator or footswitch.

- Check that the generator back panel label is present and decipherable and that the front panel markings and symbols are still legible.

- Retract the fuse drawer of the mains inlet connector and verify that both fuses are intact and match the rated current and breaking characteristics as per the back panel label.

- Verify that the resistance between the earth terminal of the mains inlet connector and the generator enclosure is within the limits defined in IEC 601-1 or the corresponding national standard as applicable.

- Switch on the generator, ensuring that the initial internal self-test is completed normally, as reported on the front panel display. Check that the audio alarm, front panel warning indicator and vacuum fluorescent display are functioning normally via the user verification sequence which follows initialization. Check Desiccation detector operation.

- Check that the enclosure earth leakage current is within the limits for Class I equipment as prescribed within IEC 601-1 or the corresponding national standard as appropriate.

- Measure the patient earth leakage currents and ensure it is within the limits of BF type equipment as defined within IEC 601-1 or a corresponding national standard.

- Details of these tests should be recorded in an equipment log with the date of test for future reference. Contact the service repair center selected by the manufacturer, should a unit fault be suspected.

SECTION 14 LIMITED WARRANTY

The manufacturer warrants the products listed below to be free from defects in material and workmanship under normal use and service for the period(s) set forth below. The manufacturer's obligation under this warranty is limited to the repair or replacement, at its sole option, of any product, or part thereof, which has been returned to it or its Distributor within the applicable time period shown below after delivery of the product to the original purchaser, and which examination discloses, to the manufacturer's satisfaction, that the product is defective. This warranty does not apply to any product, or part thereof, which has been repaired or altered outside the manufacturer's factory in a way so as, in the manufacturer's judgement, to affect its stability or reliability, or which has been subjected to misuse, neglect or accident.

The warranty periods for the components of the PlasmaKinetic® Generator are as follows:

Component	**Warranty Period**
Generator and footswitch	One year from shipment date

This warranty is in lieu of all other warranties, expressed or implied, including, without limitation, the warranties of merchantability and fitness for a particular purpose, and of all other obligations or liabilities on the part of the manufacturer. The manufacturer neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale or use of any of the manufacturer's products. Notwithstanding any other provision herein or in any other document or communication. The manufacturer's liability with respect to this agreement and products sold hereunder shall be limited to the aggregate purchase price for the goods sold by the manufacturer to the customer. There are no warranties which extend beyond the terms hereof. The manufacturer disclaims any liability hereunder or elsewhere in connection with the sale of this product, for indirect or consequential damages.

The manufacturer reserves the right to make changes in equipment built and/or sold by it at any time without incurring any obligation to make the same or similar changes on equipment previously built and/or sold by them.

The products listed above are manufactured in the United Kingdom by:

Customer Service USA:
Gyrus Medical Inc.
6655 Wedgwood Road, Suite 105
Maple Grove, MN 55311-3602, USA
Tel: 763 416 3000
Fax: 763 416 3001
Toll Free: 1 800 852 9361

Customer Service International:
Gyrus International Ltd.
410 Wharfedale Road
Winnersh Triangle
Wokingham Berkshire RG41 5RA, UK
Tel: +44 (0)118 921 9700
Fax: +44 (0)118 921 9800

Registered Office/Manufacturer:
Gyrus Medical Limited
Fortran Road,
St Mellons, Cardiff CF3 0LT, UK.
Tel: +44 (0) 29 20 776300
Fax: +44 (0) 29 20 776301

PlasmaKinetic® is a trademark of Gyrus Medical Ltd.
PK Seal® is a trademark of Gyrus Group PLC.

CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician.

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MEDICAL ELECTRICAL EQUIPMENT
CLASSIFIED BY UNDERWRITERS LABORATORIES INC.
WITH RESPECT TO ELECTRIC SHOCK, FIRE, MECHANICAL
HAZARDS AND OTHER SPECIFIED HAZARDS ONLY IN
ACCORDANCE WITH UL2601-1 AND CAN/CSA C22.2 NUMBER 601.1

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CAUTION	USE ONLY THE POWER CORD PROVIDED BY YOUR PRODUCT SUPPLIER. DO NOT USE ANY OTHER POWER SUPPLY CORD.	**MISE EN GARDE**	UTILISER UNIQUEMENT LE CORDON D'ALIMENTATION FOURNI PAR VOTRE FOURNISSEUR. NE PAS UTILISER D'AUTRE TYPE DE CORDON D'ALIMENTATION.
CAUTION	THE POWER SUPPLY CORD PROVIDED IS INTENDED FOR NORTH AMERICAN 110V USE. THIS POWER CORD IS UL LISTED. TYPE SJT, RATED 120V AT 10A MINIMUM. FOR OPERATION AT OTHER MAINS SUPPLY VOLTAGES CONSULT YOUR LOCAL PRODUCT REPRESENTATIVE FOR ADVICE OR THE PROVISION OF A REPLACEMENT POWER CORD.	**MISE EN GARDE**	LE CORDON D'ALIMENTATION EST CONCU POUR UNE UTILISATION EN AMERIQUE DU NORD SOUS UNE TENSION DE 110V. CE CORDON D'ALIMENTATION EST DE TYPE UL, SJT. ALIMENTATION 120V ET 10A MINIMUM. CONTACTER VOTRE REPRESENTANT LOCAL POUR UNE UTILISATION A UN AUTRE VOLAGE.
WARNING	RISK OF FIRE REPLACE FUSE AS MARKED.	**ATTENTION**	RISQUE D'INCENDIE REMPLACER LE FUSIBLE COMME INDIQUE